

1. A method of forming an optical communication path, comprising:
  - a) *creating a channel within a planar layer; and*
  - b) *forming at least a portion of an optical path within the channel.*

(Group I: Claim 1)(*emphasis added*)

38. An optical communication apparatus, comprising:
  - a first planar layer having a channel;*
  - a first reflective layer deposited within the channel; and*
  - a second reflective layer deposited over the channel, wherein the first and second reflective layers co-operate to form an optical path.*

(Group I: Claim 38)(*emphasis added*)

24. A method of forming an optical path, comprising:
  - a) *providing a sheet* photosensitive to an optical source of a pre-determined wavelength; and
  - b) *exposing the sheet to an optical path mask in the presence of the optical source to define an optical path lying within the plane of the sheet.*

(Group II: Claim 24)(*emphasis added*)

The Examiner's comments seem to suggest that "planar layer" is a distinguishing mode of operation of the two groups. Group II/ Claim 24 is clearly drawn to a method of forming of an optical path lying within a plane of a sheet. Group I/ Claim 1 is clearly drawn to a method of forming at least a portion of an optical path within a channel of a planar layer. Group I/ Claim 38 is similarly drawn to an apparatus having an optical path formed within a channel of a planar layer. Assuming that the Examiner is analogizing "sheet" of claim 24 to "planar layer" of claims 1 and 38 applicant submits that both Groups include the planar layer limitation. Applicant notes that the *channel of claims 1 and 38 is within the planar layer- thus the portion of the optical path formed within the channel is necessarily within the planar layer.*

In both Groups defined by the Examiner, at least a portion of the optical path is formed within the planar layer or sheet. Thus the Examiner's stated reasoning of "describing the optical path as in the planar layer" does not adequately distinguish Group II from Group I. Indeed, please note the title of the application ("Planar Layer with Optical Path") and the description

of the Figures illustrating various embodiments of planar layers with optical paths and methods of forming the same.

Applicant respectfully requests the Examiner to either withdraw the restriction requirement distinguishing Groups I and II or to alternatively provide a more descriptive basis for the restriction. Otherwise applicant cannot clearly distinguish whether a claim defining an optical path within a planar layer is properly categorized with Group I or Group II.

**B. Distinction between Groups I and III**

Applicant respectfully submits that the restriction between Groups I and III based on “planar layer” is likewise improper and that the arguments presented above with respect to the distinction of Groups I and II similarly applies with respect to the distinction between Groups I and III.

Claims 1, 38 (Group I) and 28, 47 (Group III) state:

1. A method of forming an optical communication path, comprising:
  - a) *creating a channel within a planar layer; and*
  - b) *forming at least a portion of an optical path within the channel.*

(Group I: Claim 1)(*emphasis added*)

38. An optical communication apparatus, comprising:  
*a first planar layer having a channel;*  
*a first reflective layer deposited within the channel; and*  
*a second reflective layer deposited over the channel, wherein the first and second reflective layers co-operate to form an optical path.*

(Group I: Claim 38)(*emphasis added*)

28. An optical communication apparatus comprising:  
*a planar layer; and*  
*an optical path at least a portion of which is formed within the planar layer.*

(Group III: Claim 28)(*emphasis added*)

47. An optical communication apparatus, comprising:  
*a sheet having a defined optical path lying within a plane of the sheet,*  
*wherein the optical path is defined by regions of opaqueness within the sheet.*

(Group III: Claim 47)(*emphasis added*)

Thus the Examiner's stated reasoning of "describes the optical path as in the planar layer" (Group III) versus "describes the optical path in a channel" (Group I) does not adequately distinguish Group III from Group I *because the optical path lies within the planar layer in each case*. Claim 28 of Group III, for example, does not exclude the formation of at least a portion of the optical path within a channel of the planar layer.

Applicant respectfully requests the Examiner to either withdraw the restriction requirement distinguishing Groups I and III or to alternatively provide a more descriptive basis for the restriction.

#### **C. Distinction between Groups II and III**

The Examiner has indicated that Groups II and III are related as process of making (Group II) and product made (Group III). The Examiner has proceeded to distinguish Group III from Group II by noting that the product could also be made "using deposition".

Claims 24 (Group II) and 28, 47 (Group III) include the language:

24. A method of forming an optical path, comprising:  
a) *providing a sheet* photosensitive to an optical source of a pre-determined wavelength; and  
b) exposing the sheet to an optical path mask in the presence of the optical source *to define an optical path lying within the plane of the sheet*.

(Group II: Claim 24)(*emphasis added*)

28. An optical communication apparatus comprising:  
*a planar layer; and*  
*an optical path at least a portion of which is formed within the planar layer.*

(Group III: Claim 28)(*emphasis added*)

47. An optical communication apparatus, comprising:  
*a sheet having a defined optical path lying within a plane of the sheet,*  
wherein the optical path is defined by regions of opaqueness within the sheet.

(Group III: Claim 47)(*emphasis added*)

Applicant agrees that the process claim 24 (Group II) is limited to the use of photosensitive material which is exposed to an optical path mask to define the optical path within the plane of the sheet. Applicant also agrees that the apparatus of claim 28 is not limited to being made by the process of claim 24 and that in fact the apparatus of claim 28 could be made using techniques such as deposition. Applicant notes, however, that the Examiner has grouped claims 28 *and* 47 into Group III.

Claim 47 (Group III) is limited to a sheet with an optical path defined within the sheet by regions of opaqueness within the sheet. Applicant respectfully submits that the Examiner's reasoning with respect to "deposition" is not adequate with respect to claim 47 of Group III. In particular, the Examiner has not shown that the product as claimed (claim 47 of Group III) can be made by a different another and materially different process from that described in claim 24 (Group II).

Applicant respectfully submits that the Examiner must either define a different grouping for Group III or withdraw the restriction requirement between Groups II and III.

Applicant also notes that if the Examiner withdraws the restriction requirement between groups I and II, the Examiner will need to provide an alternate basis for the restriction between Groups II and III.

## **Conclusion**

If there are any issues that can be resolved by telephone conference, the Examiner is respectfully requested to contact the undersigned at (512) 858-9910. Please note that an Information Disclosure Statement accompanies this Response.

Respectfully submitted,

Date July 27, 2005

William D. Davis  
William D. Davis  
Reg No. 38,428